# Surveying for rare amphibians, rare reptiles, and vernal pools, in Robinson State Park, Massachusetts

Final Report 31 January 2008

# Submitted by:

Dr. Paul R. Sievert
U.S. Geological Survey

Massachusetts Cooperative Fish & Wildlife Research Unit
University of Massachusetts Amherst
Amherst, MA 01003
Phone: 413-545-4888

E-mail: psievert@nrc.umass.edu

### **BACKGROUND**

Robinson State Park in Agawam, Massachusetts, was established in 1934. It extends for about 5 miles along the Westfield River and consists of over 900 acres, including a 17 acre island in the Westfield River. The park is adjacent to an urban/developed area and has extensive trails, roads, and picnic areas. Nevertheless, two state rare species of reptiles have been reported in the park (only one species has been formally entered into the Natural Heritage & Endangered Species Program database) and an additional two rare amphibians and a rare reptile occur within two miles of the park. These records lead to a reasonable likelihood of identifying additional rare species records and habitat, including breeding pools, in the Park. The topographic map of the area, and the Department of Environmental Protection Wetlands data layer, show the presence of a several wetlands, including wooded swamps, shrub swamp, marshes, a small pond, small streams, and the riparian area along the Westfield River, and the river itself. In addition, the park supports oak forest communities that provide upland habitat for turtles, with open sandy areas for nesting.

# **OBJECTIVE**

To conduct a biological resources survey of Robinson State Park focused on rare reptiles and amphibians, and their habitats, including vernal pools.

### **RESULTS**

# Eastern Box Turtle

Robinson State Park (RSP) was visited on three occasions to survey for eastern box turtles (*Terrapene c. carolina*) (State Species of Special Concern) [Michael T. Jones (MTJ), and Lisabeth L. Willey (LLW): 30 April 2007, LLW: 20 and 21 Sept 2007]. During each visit, different areas of the park were surveyed so that all Timber Sale Areas were surveyed at least once. Approximately 2 hours were spent in each Timber Sale Area, and the reminder of the park was evaluated for potential habitat.

Good box turtle habitat was found throughout the park. As we have observed in other areas of the Connecticut River Valley, box turtles likely avoid the areas of the park with dense conifer canopy, particularly monocultures of pines (*Pinus* species) or hemlock (*Tsuga canadensis*). Most deciduous and mixed forest sites in the park appear suitable, particularly ones with abundant leaf litter, early successional forest and nesting habitat, and near emergent wetlands. Areas with lower amounts of human activity likely support higher densities of box turtles due to a lower risk of collection. Overall, RSP provides enough suitable habitat for nesting, over-wintering, and foraging to support a breeding population of box turtles. Given the number of individuals found per search hour, this site may contain densities comparable to sites in the Connecticut River Valley where box turtles are known to successfully breed.

### Tressle Pavilion Area

This area appears to contain good box turtle habitat, with abundant leaf litter and an adequate shrub layer. Upland forested areas are in close proximity to forested wetlands and open areas. One adult box turtle was observed by Karen Searcy in this area during a vegetation survey on 18 June 2007.

### Fire Access Road Area

This area contains good box turtle habitat, including forested wetland areas adjacent to upland deciduous and mixed forests, with abundant leaf litter and adequate understory. In addition, the site is near open right-of-ways suitable for nesting. Two adults were found in this section (Figure 1 & 2). The NHESP database contains an observation from 4 June 2004 immediately south of this area. Given our low survey effort, the observation of two turtles may indicate the presence of a substantial population in this section of RSP.

# Swiss Club Development Area

This area appears suitable for box turtles, and although no turtles were found, it is nearby an area where two adults were observed.

### Main Entrance Area

Portions of this area are composed primarily of conifers, and are unlikely to support high densities of box turtles. Mixed and deciduous forest sections potentially contain box turtles, but this is uncertain here due to the heavy use of this part of the park.

### James Street Area

This section consists of good box turtle habitat with deep leaf litter, predominantly deciduous canopy, and adequate understory and woody debris, however no turtles were observed during surveys.

# James Street Extension

The sandy field adjacent to deciduous forest portions of this area appears to provide good box turtle nesting habitat, and thus the surrounding forest is likely to support box turtles. Portions of this area are also dominated by conifer in the canopy and probably represent less desirable areas, but areas with mixed and hardwood forest appear to be good habitat. The NHESP database contains an observation of two box turtles within this area on 17 Sept 2006.

Figure 1. Eastern box turtle: Female # 136, Robinson State Park, 20 Sept 2007.



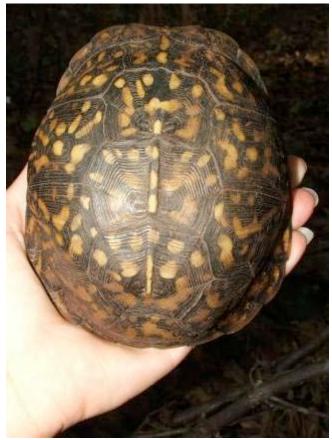






Figure 2. Eastern box turtle: Male # 138, Robinson State Park, 21 Sept 2007.



Robinson State Park Box Turtle Observations

Legend

Box Turtle Observations 2007

Previous Box Turtle Observations in NHESP distabase

Timber Sale Boundaries

Robinson State Park Boundary

Figure 3. Observations of eastern box turtles in Robinson State Park, this study 2007.

Table 1. Eastern box turtles (Terrapene c. carolina) observed at Robinson State Park in 2007.

Sex	Ernst (1974) Notch Code	Lat.	Long.	Age	Straight Carapace Length (mm)	Carapace Width (mm)	Wt (g)	Deformities and injuries
F	136	42.08281	-72.67325	> 20	131.4	113.8	512	Missing toes on both front feet
M	120	42.09214	72 67290	worn	140.0	111 7	556	13 marginals on both sides, 3rd and 4th verterbal split, chipped 10th right marginal
		Sex (1974) Notch Code	Sex         (1974) Notch Code         Lat.           F         136         42.08281	Sex         (1974) Notch Code         Lat.         Long.           F         136         42.08281         -72.67325	Sex         (1974) Notch Code         Lat.         Long.         Age           F         136         42.08281         -72.67325         > 20	Sex         (1974) Notch Code         Lat.         Long.         Age Length (mm)           F         136         42.08281         -72.67325         > 20         131.4	Sex         (1974) Notch Code         Lat.         Long.         Age Length (mm)         Carapace Length (mm)         Width (mm)           F         136         42.08281         -72.67325         > 20         131.4         113.8	Sex         (1974) Notch Code         Lat.         Long.         Age Length (mm)         Carapace Length (mm)         Width (mm)         Wt (g)           F         136         42.08281         -72.67325         > 20         131.4         113.8         512

# **Wood Turtle**

On 30 April 2007, MTJ and LLW surveyed the Westfield River along the border of RSP for wood turtles. The Westfield River appeared to be suitable habitat for wood turtles, but none were observed during the survey.

## Potential threats to turtles at Robinson State Park

### Collection

Due to the high volume of pedestrian traffic throughout Robinson State Park, incidental collection may be a significant concern at this site.

On 30 April 2007, MTJ and LLW observed children collecting large numbers of toads in a bucket from a pond in RSP. Similar collection efforts for box turtles could prove detrimental to the population.

# Mowing

The right of ways, fields, and other open sections of the park could be a threat if mowed during the active turtle season. The period of greatest concern is nesting in June, although wood turtles and box turtles are both known to use fields and scrubby areas from May through September. Grassy areas, maintained as lawns, may provide suitable nesting areas for box turtles and these sites may put the animals at lower risk since they would not stay long, since cover is not available, and people doing the mowing are more likely to see the turtles. Herbaceous or shrubby areas that are allowed to grow, but subsequently cut, are a greater risk to box turtles since they often occupy such sites, particularly in June and July, and are thus susceptible to mortality by mowing.

### Road Mortality

Several roads in the park bisect suitable habitat, but is not likely to be a large source of mortality.

#### **Four-toed Salamanders**

This section written by P. Swain, NHESP, from information provided in the Rare Animal Observation Form submitted to NHESP by Paul Sievert, the NHESP Four-toed Salamander fact sheet, NHESP staff biologist Lori Erb, and the Robinson State Park natural community report materials from Karen Searcy.

On April 24, 2007, Four-toed salamanders (*Hemidactylium scutatum*) (State Species of Special Concern) were located in a wetland at the northwest end of the park during surveys for vernal pools and Four-toed Salamander habitat. *Note: The species has been recommended for delisting in 2008. As of the writing of this report, it remains a MESA listed species.* Observers were Dr. Paul R. Sievert, Dr. Alan Richmond, Bradley W. Compton, and Kimberly Ogden. Three females Four-toed Salamanders were observed: two were guarding eggs at separate nests, and the third appeared to be carrying eggs. The habitat is a permanent marsh about 50 m across. It is mostly less than 0.25m deep with a

muck bottom, sphagnum edges, with non-persistent emergent vegetation dominant. There was a small patch of cattails. Fish were present, and the water appears to be permanent, either of which keeps the wetland from being considered a certifiable vernal pool in Massachusetts The fish are unusual for Four-toed habitat. The site at RSP where the Four-toeds were found is in the northern part of a shrub swamp also sampled by the plant and natural community inventory (site ROB9, called a Shrub Swamp). The ecological study recorded the presence of hummocks, some with sphagnum, in their plot at the southern end of wetland, but noted that the hummocks were not overhanging the water.

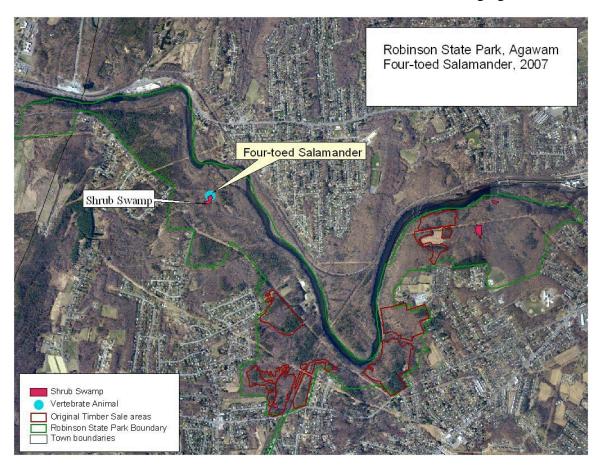


Figure 4. Four-toed Salamander location, 2007, Robins State Park.

Adult Four-toed Salamanders live in forested habitats surrounding swamps, bogs, marshes, vernal pools, and other (normally) fish-free aquatic sites that are used as breeding sites. Adults are infrequently encountered outside of the spring nesting period. They overwinter in forested habitat in holes, channels and other crevices in the ground. Distribution is limited to areas that provide both breeding and upland habitats in close proximity.

Nests are made in wetland hummocks of grasses, sedges or wet moss (usually sphagnum moss) overhanging slow moving streams or pools of standing water. Larvae are typically found in small pools and slow moving streams associated with appropriate nesting areas.

Figure 5a, 5b. and 5c. Four-toed salamander, egg mass, and site.

Fig. 5a. Adult female four-toed salamander



Fig. 5b. Four-toed nest with eggs.



Fig. 5c. Wetland containing 3 adult female four-toed salamanders and 2 nests.



No Four-toed Salamanders were found in the other wetlands or vernal pools examined at RSP in 2007. The Park has many wetlands with hummocks and hollows, although few obvious Sphagnum hummocks overhanging water were reported (the community field form has an overt question about sphagnum hummocks, but it is restricted to sites visible from the vegetation plot). This leaves open the question of the size of a population at RSP – clearly present and reproducing as reported. RSP provides widespread apparently suitable adult and larval habitat for foraging, and over-wintering. However, suitable nesting substrate – sphagnum hummocks abutting pools of water deep enough for larval survival – may be limited, even within relatively large wetlands. Four-toed-salamanders are difficult to inventory and the species is generally considered to be under surveyed. Potential threats at Robinson State Park

Trails near the nesting area: Increased miles of trails used by off road vehicles where litter is compressed or disappears would cause problems for movement of the adults

which need the moisture of loose and decaying leaf and branch litter found on the forest floor. Amphibians in general do better in shade than opening, sunny areas.

# Management

The greatest threat to the four-toed salamander is habitat destruction resulting from road construction, development, and timber harvesting that results in intense sun on the forest floor in and around boggy wetlands, peatlands, and forested wetlands. Protection of both the breeding habitat and adjacent non-breeding, mature forest habitat is necessary to maintain populations of the species. Even if *Hemidactylium scutatum* is delisted later in 2008, protection of this site, and its surroundings, where reproduction is known would benefit the species. No management activities are known to be proposed for this area.

# **Vernal Pools**

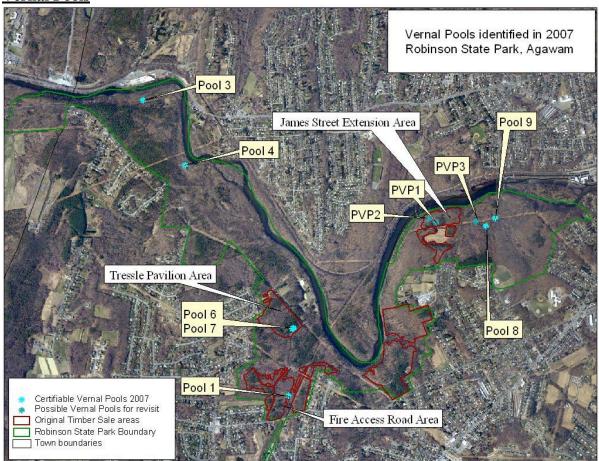


Figure 6. Vernal pools located in 2007 at Robinson State Park.

### Management and Habitat Recommendations

We recommend not harvesting in areas that have been certified as vernal pools. In addition, as more pools are identified, they should be afforded the same protection from human disturbance.

Pools to be certified: dates visited

24 April 2007 (Paul Sievert, Alan Richmond, Brad Compton, and Kim Ogden)

6 August 2007 (David Paulson)

1 October 2007 (David Paulson and Al Richmond)

9 October 2007 (David Paulson)

30 October 2007 (David Paulson, Ray Webber, Pat Swain)

## Pool 1

N 42.08162

W 072.67085 GPS Format: hddd.ddddd

Comments: Long narrow pool along fire road (63' x 258')

Spring peepers, green frogs, spotted salamander egg mass (2), wood frog egg mass

(TNTC)



Figure 7. Dry pool.



Figure 8. Spotted salamander egg mass.

## Pool 3

N 42.10550

W 072.68722 GPS Format: hddd.ddddd

Comments: By "pavilion/stone building", north of the natural gas line. Large shallow pool, probably less than  $\frac{1}{2}$  m deep. 80% coverage by red maple canopy, trees 6-18" dbh 62+ wood frog egg masses (85' x 450')



Figure 9. Dry pool.



Figure 10. Wood frog egg mass.

# Pool 4

N 42.10044

W 072.68243 GPS Format: hddd.ddddd

Comments: Small pool along side of road in park. (66' x 260')

5 wood frog egg masses





Figure 11. Dry pool.

Figure 12. Wood Frog Egg Mass

# Pool 6

N 42.08711

W 072.67046 GPS Format: hddd.ddddd

Comments: Ray Webber called this the Trestle pool. This pool is about 50 feet off the park road, has an electric line running through basin, 60-70 wood frog egg masses, no spotted salamander seen (44' x 140').



Figure 13. Dry pool.



Figure 14. Wood frog egg mass.

## Pool 7

N 42.08707

W 072.67033 GPS Format: hddd.ddddd

Comments: this pool is behind "pool 6", Ray Webber called this "Trestle pool 2",

20 wood frog egg masses (72' x 64')



Figure 15. Dry pool

# Pool 8

N 42.09564 W 072.64941 155' x 200'

Comments: tussock sedge marsh at east end of park 6-spring peepers calling, 50+ wood frog egg masses, painted turtle, 2 mallards





Figure 16 Dry pool.

Figure 17. Wood frog egg mass.

# Pool 9

N 42.09624 W 072.64832 100' x 250'

Comments: Large Marsh at the east end of the park along the power lines corridor. Looks like great spotted turtle habitat, but none seen, spring peepers calling, 1 wood frog egg mass in ditch.



Figure 18. Pool number 9.

# Potential vernal pools to be certified in the spring of 2008

1) N 42.09601 W 072.65060 (Near Pool 9) "PVP3"

2) N 42.09585 W 072.65501 "PVP 1" Very Small (25' x 30')



Figure 19. Potential vernal pool #1.

3) N 42.09609 W 072.65589 "PVP2", Very small, no pooling, on slope to river (20' x 20')



Figure 20. Potential vernal pool #2





# Natural Heritage & Endangered Species Program Massachusetts Division of Fisheries and Wildlife Vernal Pool Field Observation Form

(7/99)	(	For use with Guid		cation of Verna	l Pool Habitat)		For office use only	
1. Pool locati	on	1º Pa	icl 9"		V		nstructions	
Town Ago	3wcm	· // 2 - 6-5	County 1	tempo	e^	CERTIFICATION,	LETE INFORMATION ABOUT REFER TO GUIDELINES FOR OF VERNAL POOL HABITAT.	
USGS Quadra		) 42, 0 <del>5</del> <i>၁૦</i> ૪૩, <i>3</i> ક્ક	7614 6483	SERIE  32 SERIE	s 7.5' X 7.5' s 7.5' X 15'	PROVIDE A	LL OF THE INFORMATION BOXES 1-6. IF MORE SPACE	
Written directions  Past	TO POOL: 10	rse per		ng pou	sor	IS REQUIRED, ATTACH ADDITIONAL PAGES, INCLUDE ALL REQUIRED PHOTOGRAPHS AN DOCUMENTATION. SIGN THE FORM IN THE AREA PROVIDED ON THE REVERSE SIDE.		
SUPPLY SU	Con	idar (	poks lik	مر عهو	<u></u>	WILL BE RETUR		
# 5 1/0 + 4	so dont	GPS For	met 5.	See Al K	Richmand	HE FOLLO	WING INSTRUCTIONS REFER TO LUMBERED BOXES,	
	1,000	1.12	Q P	~ K	cichyer	1. THE 7.5	5 X 7.5 SERIES HAS THE INUTE SERIES" IN THE UPPER	
F # 1 1 0 .	21170	1 244	1.			RIGHT HAND CO	PRINER ALONG WITH THE AME. THE 7.5 X 15 MINUTE	
			<u> </u>	(USE ADDITIONAL PAC	ES, IF NECESSARY.)		ABELED IN THE UPPER AIGHT AND HAS THE QUADRANGLE	
2. Observation	n dates				4 2460		dwer right corner. Rections <b>must</b> be included	
	,	f. 1	e pool/species		4/24/07	2 INDICATE	THE FIRST AND LAST DATES	
Last date pool ob			date species				VERE OBSERVED.	
3 A. Evidence		e amphib			<del>,                                     </del>	TION BY OBLIGA	AND BARE FOR CERTIFICA- TE SPECIES, PART C IS	
* = RARE SPECIES  SPOTTED	ADULTS	SPERMATOPHORES	EGG MASSES	SALAMANDER LARVAE	TRANSFORMING JUVENILES		DITIONAL INFORMATION OR FOR CERTIFICATION BY	
SALAMANDER						OBLIGATE SPEC	JE SPECIES. IF CERTIFYING BY IES, PROVIDE A PHOTOGRAPH	
* BLUE-SPOTTED SALAMANDER						OF THE POOL H	OLDING WATER AND AT LEAST PH (OR AUDIO TAPE FOR	
★ JEFFERSON SALAMANDER				···		Снояизіма) оғ Боя сеятіғ	BREEDING ACTIVITY.	
★ MARBLED SALAMANDER						POOL HOLDING	DE PHOTOGRAPHS OF THE WATER AND PHOTOGRAPHS	
UNIDENTIFIED MOLE SALAMANDER						REQUIRED. AD	THE FACULTATIVE SPECIES AS DITIONALLY, PROVIDE A	
	BREEDING	MATED	EGG	FROG	TRANSFORMING		F THE POOL WHEN DRY OR OVE THAT IT HAS NO FISH.	
WOOD FROG	CHORUS	PAIRS	MASSES 1 4/29	TADPOLE8	JUVENILES	3 B. Ev	idence: fairy	
* SPADEFOOT TOAD						shrimp	.acmoor ramy	
						DATE OBSERVED		
3 C. Evidence		live orgar	nisms Indi	cate date of ob	servation.			
* = RARE SPECIES	OBSERVED	ACTIVITY C	OBSERVED	,		DATE OBSERVED	ACTIVITY OBSERVED	
BREEDING SPRING PEEPERS	4129	(alling		PAINTE	D TURTLES			
BREEDING GRAY TREEFROGS				SNAPPII	NG TURTLES			
BREEDING GREEN FROGS					EOUS DIVING E LARVAE		· · · · · · · · · · · · · · · · · · ·	
BREEDING LEOPARD FROGS					SCORPIONS			
BREEDING PICKERAL FROGS				DRAGON	FLY NYMPHS			
BREEDING AMERICAN TOADS				DAMSEL	FLY NYMPHS			
BREEDING FOWLER'S TOADS		~		DOBSON	FLY LARVAE			
* BREEDING FOUR-TOED SALAMANDERS					GIG BEETLE			
RED-SPOTTED NEWT (ADULTS)				CAL	DDISFLY			
* SPOTTED TURTLES					SAVRE	<del></del>		

#### Although the following information is not required for certification, it is useful to NHESP to possibly better protect the vernal pool, its habitat and species. Optional information Instructions (continued) 4. INDICATE THE PHOTOGRAPHS BEING Property owner THE STRONGLY RECOMMENCED THAT LANDOWNER PERMODERATION DOCUMENTS CERTIFICATION DOCUMENTS SUBMITTED. LABEL, DATE, AND SIGN ALL PHOTOS. 5. MARK THE POOL CLEARLY ON ALL MAPS. THE POOL MUST BE CLEARLY DISTINGUISHED FROM Name OTHER WETLANDS AND BE RELOCATEABLE BY OTHERS. PROVIDE ANY MAPS THAT WOULD HELP SOMEONE UNFAMILIAR WITH THE AREA LOCATE THE Address VERNAL POOL IN THE FIELD. 6. THE FORM MUST BE SIGNED. UNSIGNED SUBMISSIONS WILL BE RETURNED WITHOUT FURTHER ACTION. **OPTIONAL INFORMATION:** State MA PROPERTY OWNER. PROVIDE INFORMATION ZIP O LOO ! ABOUT PROPERTY OWNER(S), IF KNOWN. IT IS RECOMMENDED THAT YOU BEEK PROPERTY OWNER PERMISSION PRIOR TO CERTIFICATION ACTIVITIES. Rare wetland Y N WERE ANY RARE STATE-LISTED SPECIES OBSERVED PARE SPECIES. A PHOTOGRAPH IS NECESSARY USING THIS POOR? FOR DOCUMENTATION OF RARE SPECIES HABITAT. species DESCRIPTION. PROVIDE ANY INFORMATION Y N IS A PHOTOGRAPH OF THE RARE SPECIES INCLUDED WITH THAT WILL DISTINGUISH THE POOL FROM OTHER WETLANDS (SOULDERS, DEBRIS, TREE SPECIES. Description of pool and surroundings MUST BE LABELED. 4. Photographs DIMENSIONS: APPROXIMATE LENGTH APPROXIMATE WIDTH DATED, AND SIGNED. POOL HOLDING WATER APPROXIMATE DEPTH OBLIGATE +/OR FACULTATIVE SPECIES DESCRIBE DISTINCTIVE FEATURES (ROADS, STRUCTURES, BOULDERS, ETC.) WHICH ARE DRY POOL (REQUIRED FOR EVIDENCE 3C) VISIBLE FROM OR NEAR THE POOL, park, along the power lines corridor work, like great sported (5) Maps submitted USGS TOPOGRAPHIC MAP (REQUIRED) ONE OR MORE OF THE FOLLOWING: AERIAL PHOTOGRAPH DISTANCES/COMPASS DIRECTIONS PROFESSIONAL SURVEY ARE THERE OTHER DISTINCTIVE FEATURES ABOUT THIS POOL (VEGETATION TYPES, ASANDONED VEHICLES, FOOT TRAILS, ETC.) THAT WOULD HELP SOMEONE RECOGNIZE IT? LARGE SCALE TOPO OTHER OPTIONAL EXTRA INFORMATION SKETCH MAP OF AREA ASSESSOR'S MAP GPS LONGITUDE/LATITUDE COORDINATES 6. Observer information & signature SEND COMPLETED FORM AND SUPPORTING DOCUMENTATION TO:

# State MA ZIP 01003 (-)08-813-87JS e-mail

I hereby certify under the pains and penalties of perjury that the information contained in this report is true and complete to the best of my knowledge.

avillause

NH&ESP

VERNAL POOL CERTIFICATION MA DIVISION OF FISHERIES & WILDLIFE ROUTE 135 Westeorough, MA 01581

All submissions and supporting documents will be retained by the Natural Heritage & Endangered Species Program. Information submitted on this form and other documents is part of the public record and is available to interested parties under the Otate Decimenta



\* SPOTTED TURTLES

# Natural Heritage & Endangered Species Program Massachusetts Division of Fisheries and Wildlife Vernal Pool Field Observation Form

(7/99)		For use with Guid			VALIOI il Pool Habitat)	LOH	For office us	e only.
1. Pool location		11/001	8"		v		Instructions	
Town Ag	cuem	) પર્વે. છેક	County 1	Jempo	)e_ = 7.5' X 7.5'	CERTIFICATION	MPLETE INFORMATION ABO ON, REFER TO GUIDELINES ON OF VERNAL POOL HABIT	FOR
USGS Quadrai	ngle name <u>L</u>	REQUESTED	E ALL OF THE INFORMATION IN BOXES 1-6. IF MORE	SPACE				
WAITTEN DIRECTIONS  A  T  B  B  B  B  B  B  B  B  B  B  B  B	TO POOL: +	-sh	IS REQUIRED, ATTACH ADDITIONAL PAGES. INCLUDE ALL REQUIRED PHOTOGRAPHS AND DOCUMENTATION. SIGN THE FORM IN THE AREA PROVIDED ON THE REVERSE SIDE. INCOMPLETE OR UNSIGNED SUBMISSIONS WILL BE RETURNED.					
BE SUBMATION OF SUBMATION	G	25 Farn	ret à soe	Al Rid	mand	THE FO	LLOWING INSTRUCTIONS RE E NUMBERED BOXES,	FER TO
and the second s	DINSON	1 Sta	te Pa	~K		LEGEND "7.	7.5 X 7.5 SERIES HAS THE MINUTE SERIES" IN THE CORNER ALONG WITH THE	JPPER
				(USE ADDITIONAL PA	GES, IF NECESSARY.)	QUADRANGLI SERIES IS S	E NAME. THE 7.5 X 15 A D LABELED IN THE UPPER F ER AND HAS THE QUADRAN	AINUTE RIGHT
2. Observatio	n dates	Pius da			4 12:107	NAME IN THE	E LOWER RIGHT CORNER, N DIRECTIONS MUST BE INC	
Last date pool ob	served (0/		e pool/species date species		464/67	THAT THE PO	ATE THE FIRST AND LAST O DOL OR ITS BIOLOGICAL S WERE OBSERVED.	)ATES
3 A. Evidence	: obligat	e amphib	ians Indica	te date of obse	ervation.	3, PAR	T A AND B ARE FOR CERTS	
* = RARE SPECIES	COURTING ADULTS	SPERMATOPHORES	1	SALAMANDER LARVAE	TRANSFORMING JUVENILES	EITHER FOR	ADDITIONAL INFORMATION D) OR FOR CERTIFICATION	-
SPOTTED SALAMANDER				-		THE FACULT.	ATIVE SPECIES. IF CERTIF	YING BY
BLUE-SPOTTED SALAMANDER						OF THE POO ONE PHOTOC	PECIES, PROVIDE A PHOTOX L HOLDING WATER AND AT BRAPH (OR AUDIO TAPE FO	LEAST
* JEFFERSON SALAMANDER						FOR CE	OF BREEDING ACTIVITY, RTIFICATION BY FACULTATIV	
* MARBLED * SALAMANDER						POOL HOLDII	OVIDE PHOTOGRAPHS OF T NG WATER AND PHOTOGRA! OF THE FACULTATIVE SPEC	PHS
UNIDENTIFIED MOLE SALAMANDER						REQUIRED. PHOTOGRAPH	ADDITIONALLY, PROVIDE A H OF THE POOL WHEN DRY PROVE THAT IT HAS NO FIS	OR
	BREEDING CHORUS	MATED PAIRS	EGG MASSES	FROG TADPOLE8	TRANSFORMING JUVENILES			
WOOD FROG			SO+ 4/2			3 B. E	Evidence: fairy	/
* SPADEFOOT TOAD						Shrimp		
3 C. Evidence	: facultat	tive orgar	nisms <sub>Indi</sub>	cate date of ol	oservation.			
* = RARE SPECIES	DATE OBSERVED	ACTIVITY (	į.			DATE OBSERVED	ACTIVITY OBSERVED	
BREEDING SPRING PEEPERS	4/29	(۱۱۱۵)	(6)	PAINTI	ED TURTLES	4/29	(1) present	
BREEDING GRAY TREEFROGS				SNAPPI	NG TURTLES			
BREEDING GREEN FROGS					EOUS DIVING LE LARIVAE			
BREEDING LEOPARD FROGS				WATER	SCORPIONS			
BREEDING PICKERAL FROGS				DRAGON	IFLY NYMPHS			
BREEDING AMERICAN TOADS				DAMSEL	FLY NYMPHS			
BREEDING FOWLER'S TOADS				008509	NFLY LARVAE			
* BREEDING FOUR-TOED SALAMANDERS					GIG BEETLE ARVAE			
RED-SPOTTED NEWT (ADULTS)					DDISFLY ARVAE			

LEECHES

# Instructions (continued) 4. Indicate the photographs being submitted. Label, date, and sign all photos. 5. Mark the pool clearly on all maps. The pool must be clearly distinguished from other wetlands and be relocateable by others. Provide any maps that would help someone unfamiliar with the area locate the vernal pool in the field.

6. THE FORM MUST BE SIGNED. UNSIGNED SUBMISSIONS WILL SE RETURNED WITHOUT FURTHER ACTION.

**OPTIONAL INFORMATION:** 

PROPERTY OWNER, PROVIDE INFORMATION ABOUT PROPERTY OWNER(S), IF KNOWN. IT IS RECOMMENDED THAT YOU BEEK PROPERTY OWNER PERMISSION PRIOR TO CERTIFICATION ACTIVITIES.

RARE SPECIES. A PHOTOGRAPH IS NECESSARY FOR DOCUMENTATION OF RARE SPECIES HABITAT.

DESCRIPTION. PROVIDE ANY INFORMATION THAT WILL DISTINGUISH THE POOL FROM OTHER WETLANDS (BOULDERS, DEBRIS, TREE SPECIES, ETC.).

Sep attached

4.	Phot	ographs	MUST BE LABELED, DATED, AND SIGNED.			
	• 🔀	POOL HOLDING WATER				
	<b>→</b> □ 1	OBLIGATE +/OR FA	ACULTATIVE SPECIES			
		DRY POOL (REQUE	RED FOR EVIDENCE 3C)			

<u> </u>		DRY POOL (REQUIRED FOR EVIDENCE 3C)
(5)	Мар	s submitted
	X	USGS TOPOGRAPHIC MAP (REQUIRED)
		ME OR MORE OF THE FOLLOWING:  AERIAL PHOTOGRAPH  DISTANCES/COMPASS DIRECTIONS  PROFESSIONAL SURVEY  LARGE SCALE TOPO
	OPTION	OTHER

Optional	information	Although the following information is not required for certification, it is useful to NHESP to possibly better protect the vernal pool, its habitat and species.
Property Name	owner DCR	THE STRONGLY RECOMMENDED THAT LANDOWNER PERSONS OF OSTANED PROR TO COLLECTING CERTIFICATION DOCUMENTATION.
Address	Robinson North S	State Park
Town A	gaven	StateMA ZIP Olocal
Rare we species	(Y) N	WERE ANY RARE STATE-LISTED SPECIES OBSERVED USING THIS POOL?  IS A PHOTOGRAPH OF THE RARE SPECIES INCLUDED WITH THIS FILING?
Descript	tion of pool	and surroundings
	PPROXIMATE LENGTH	APPROXIMATE WIDTH
VISIBLE PROM OF	R NEAR THE POOL,	DS, STRUCTURES, BOULDERS, ETC.) WHICH ARE
to ss	ac sec	be mash at park
ARE THERE OTHER	R DISTINCTIVE FEATURES . RAILS, ETC.) THAT WOULD	ABOUT THIS POOL (VEGETATION TYPES, ABANDONED) HELP SOMEONE RECOGNIZE IT?

6.	Observer information & signature
	Name David Paulsan
	Address Holobrarth Hall
	Holdsworth way (UMASS)
	Town Anhay State MN ZIP OLOO3
	Telephone 1-508-813 -8725
	e-mailOPAULSOU@ ACAD.UMASS. EQ
lhe	ereby certify under the pains and penalties of perjury that the information

contained in this report is true and complete to the best of my knowledge.

David Kuls

SEND COMPLETED FORM AND SUPPORTING DOCUMENTATION TO:

NH&ESP

VERNAL POOL CERTIFICATION
MA DIVISION OF FISHERIES & WILDLIFE
ROUTE 135
WESTBOROUGH, MA 01581

Westволоидн, MA 01581

All submissions and supporting documents will be retained by the Natural Heritage & Endangered Species Program. Information submitted on this form and other documents is part of the public record and is available to interested parties



# Natural Heritage & Endangered Species Program Massachusetts Division of Fisheries and Wildlife Vernal Pool Field Observation Form

(7/99)	(]	For use with Guid	lelines for Certifi	cation of Verna	l Pool Habitat)	/	For office use only.
1. Pool location	on	" Pool	7 4			l	nstructions
Town Aga	wan		County In	lampo.	en	CERTIFICATION,	ETE INFORMATION ABOUT REFER TO GUIDELINES FOR OF VERNAL POOL HABITAT.
USGS Quadrar	ngle name <u>k</u>				s 7.5' X 7.5' s 7.5' X 15'	REQUESTED IN I	LL OF THE INFORMATION BOXES 1-6. IF MORE SPACE
WRITTEN DIRECTIONS	TO POOL:	Sight 1	schird,	pool 6	)(0	INCLUDE ALL RI DOCUMENTATION	TTACH ADDITIONAL PAGES. EQUIRED PHOTOGRAPHS AND N. SIGN THE FORM IN THE
SUBMITTION DOOR	3 "	Calle	PO FN	7 (00)	110		ON THE REVERSE SIDE. R UNSIGNED SUBMISSIONS NED.
SECONDATION OF SECOND	G	3 farm	Is he	100.00	ld da		WING INSTRUCTIONS REFER TO IUMBERED BOXES,
THE TOTAL CO.	Dias.	12	10 E	)		LEGEND "7.5 M	5 X 7.5 SERIES HAS THE INUTE SERIES" IN THE UPPER RINER ALONG WITH THE
	<u></u>	700	معر إ	(Use Additional PAG	EB, IF NECESBARY.)	QUADRANGLE NA SERIES IS SO LA	AME. THE 7.5 X 15 MINUTE ABELED IN THE UPPER RIGHT
2. Observatio	n dates					NAME IN THE LO	AND HAS THE QUADRANGLE OWER RIGHT CORNER, RECTIONS <b>MUST</b> BE INCLUDED.
			e pool/species		1/24/07	2 INDICATE	THE FIRST AND LAST DATES
Last date pool obs				• • • • • • • • • • • • • • • • • • • •	1/24/07	COMPONENTS W	OR ITS BIOLOGICAL JERE OBSERVED.
3 A. Evidence	: obligate		ians Indicat	te date of obse	rvation.	TION BY OBLIGAT	AND BARE FOR CERTIFICATE SPECIES. PART C IS
* = RARE SPECIES  SPOTTED	ADULTS	SPERMATOPHORES	MASSES	SALAMANDER LARVAE	TRANSFORMING JUVENILES	(APPRECIATED)	DITIONAL INFORMATION OR FOR CERTIFICATION BY
SALAMANDER						OBLIGATE SPEC	Æ SPECIES. IF CERTIFYING BY IES, PROVIDE A PHOTOGRAPH
* BLUE-SPOTTED SALAMANDER			<u> </u>	_		OF THE POOL H	OLDING WATER AND AT LEAST PH (OR AUDIO TAPE FOR
★ JEFFERSON     SALAMANDER						FOR CERTIF	BREEDING ACTIVITY.
* MARBLED SALAMANDER						POOL HOLDING	DE PHOTOGRAPHS OF THE WATER AND PHOTOGRAPHS
UNIDENTIFIED MOLE SALAMANDER						PHOTOGRAPH OF	THE FACULTATIVE SPECIES AS DITIONALLY, PROVIDE A F THE POOL WHEN DRY OR
	BREEDING CHORUS	MATED PAIRS	EGG MASSES	FROG TADPOLES	TRANSFORMING JUVENILES	OTHERWISE PRO	VE THAT IT HAS NO FISH.
WOOD FROG			20,484	TADI OCCO	UOVENILES	3 B. Ev	idence: fairy
* SPADEFOOT TOAD			00	•		shrimp	•
2 C Evidonos	· fooriled	1				DATE OBSERVED	
3 C. Evidence	DATE DATE	ive orgar	1ISMS Indi	cate date of ob	servation.		
* = RARE SPECIES BREEDING	OBSERVED	ACTIVITY (	ABSERVED	<del> </del>		DATE OBSERVED	ACTIVITY OBSERVED
SPRING PEEPERS				PAINTE	D TURTLES		
BREEDING GRAY TREEFROGS				SNAPPI	IG TURTLES		
BREEDING GREEN FROGS					EOUS DIVING E LARVAE		
BREEDING LEOPARD FROGS				WATER	SCORPIONS		
BREEDING PICKERAL FROGS				DRAGON	FLY NYMPHS		
BREEDING AMERICAN TOADS				DAMSELI	FLY NYMPHS		
BREEDING FOWLER'S TOADS				DOBSON	FLY LARVAE		
* BREEDING FOUR-TOED SALAMANDERS					NG BEETLE		
RED-SPOTTED							
NEWT (ADULTS)	···				DISFLY RVAE		

# Instructions (continued) 4. INDICATE THE PHOTOGRAPHS BEING SUBMITTED. LABEL, DATE, AND SIGN ALL PHOTOS. 5. MARK THE POOL CLEARLY ON ALL MAPS.

THE POOL MUST BE CLEARLY DISTINGUISHED FROM OTHER WETLANDS AND BE RELOCATEABLE BY OTHERS. PROVIDE ANY MAPS THAT WOULD HELP SOMEONE UNFAMILIAR WITH THE AREA LOCATE THE VERNAL POOL IN THE FIELD.

6. THE FORM MUST BE SIGNED. UNSIGNED SUBMISSIONS WILL BE RETURNED WITHOUT FURTHER ACTION.

OPTIONAL INFORMATION:

4. Photographs

PROPERTY OWNER, PROVIDE INFORMATION ABOUT PROPERTY OWNER(S), IF KNOWN. IT IS RECOMMENDED THAT YOU BEEK PROPERTY OWNER PERMISSION PRIOR TO CERTIFICATION ACTIVITIES.

RARE SPECIES. A PHOTOGRAPH IS NECESSARY FOR DOCUMENTATION OF PARE SPECIES HABITAT.

MUST BE LABELED.

DESCRIPTION. PROVIDE ANY INFORMATION THAT WILL DISTINGUISH THE POOL FROM OTHER WETLANDS (BOULDERS, DEBRIS, THEE SPECIES.

SOP Lacked

<b>7.</b> 1110	POOL HOLDING WATER  OBLIGATE +/OR FACULTATIVE SPECIES
<u>X</u>	ORY POOL (REQUIRED FOR EVIDENCE 3C)
3 Map	s submitted
×	USGS TOPOGRAPHIC MAP (REQUIRED)
(AND	ONE OR MORE OF THE FOLLOWING:
Ž	AERIAL PHOTOGRAPH
	DISTANCES/COMPASS DIRECTIONS
	PROFESSIONAL SURVEY
	LARGE SCALE TOPO
	OTHER
ОРТЮ	HAL EXTRA INFORMATION
1  \overline{\sqrt{2}}	SKETCH MAP OF AREA
	ASSESSOR'S MAP
$\nabla$	GPS LONGITUDE/LATITUDE COORDINATES

Optional information  Although the following information is not required for certification, it is useful to NHESP to possibly better project the vernal pool, its habitat and species.
Property owner IT IS STRONGLY RECOMMENDED THAT LANDOWNER PERMISSION BE OFFICIAL OF THE CHARGE PROPERTY OF THE CHAR
Name OCR
Address Robinson State Park
North Street
Town Agaven State MA ZIP Oloch
Rare wetland  IN Were any hare state-listed species observed using this pool?  Species  Is a photograph of the hare species included with this filling?
Description of pool and surroundings
DIMENSIONS: APPROXIMATE LENGTH 64 APPROXIMATE WIDTH 73
APPROXIMATE DEPTH
DESCRIBE DISTINCTIVE FEATURES (ROADS, STRUCTURES, BOULDERS, ETC.) WHICH ARE VISIBLE FROM OR NEAR THE POOL.
Pool right behind pool 6"
Ray webber called it "trostle pool 2"
ARE THERE OTHER DISTINCTIVE FEATURES ABOUT THIS POOL (VEGETATION TYPES, ABANDONED VEHICLES, FOOT TRAILS, ETC.) THAT WOULD HELP SOMEONE RECOGNIZE IT?

6.	Observer information & signature	-
	Name David Paulsan	
	Address Howswarth Hall	
	Holdswarth Way (UM ASS)	
	Town Amhay State MIA ZIP 01003	
	Telephone 1-508-813-8725	
	e-mail DPAULSON@ACAD UMASS BOW	
The	ereby certify under the pains and penalties of perjury that the information	<b>-</b>

contained in this report is true and complete to the best of my knowledge.

Zari Vauls

SEND COMPLETED FORM AND SUPPORTING DOCUMENTATION TO:

NH&ESP VERNAL POOL CERTIFICATION MA DIVISION OF FISHERIES & WILDLIFE **ROUTE 135** 

WESTBOROUGH, MA 01581

All submissions and supporting documents will be retained by the Natural Heritage & Endangered Species Program. Information submitted on this form and other documents is part of the public record and is available to interested parties dortha Stata Dagimanta



SPOTTED TURTLES

# Natural Heritage & Endangered Species Program Massachusetts Division of Fisheries and Wildlife Vernal Pool Field Observation Form

3	(7/99)			TIEIG ( delines for Certifi		Vation	Form	For office use only.
1	Pool location	8.	1 1	6"		7	Ins	tructions
THES INFORMATION MISS 28 SIGNATION	Town Aga USGS Quadran WRITTEN DIRECTIONS POOL TOWNING ROWNING	wam  Igle name L  TO POOL: L  SO foo.  Slan  Throus  ()	N 42. C V 072. Pebber I of f It has h its	67046 (clled) Park an or basin.	this " road ectrical database (USE ADOTICHAL PA	\$7.5' X 7.5' \$7.5' X 15' \frosHe'\ \naa- line	FOR COMPLET CERTIFICATION, RE CERTIFICATION OF PROVIDE ALL REQUESTED IN BO IS REQUIRED, ATT. INCLUDE ALL REGI DOCUMENTATION. AREA PROVIDED O INCOMPLETE OR L WILL BE RETURNE THE FOLLOWIN EACH OF THE NUM 1. THE 7.5.) LEGEND "7.5 MINL RIGHT HAND CORN CUADRANSLE NAM SERIES IS SO LABE HAND CORNER ANI NAME IN THE LOW	E INFORMATION ABOUT FER TO GUIDELINES FOR VERNAL POOL HABITAT.  OF THE INFORMATION KES 1-6. IF MORE SPACE ACH ADDITIONAL PAGES, JIRED PHOTOGRAPHS AND SIGN THE FORM IN THE IN THE REVERSE SIDE. INSKIND SUBMISSIONS D.  IG INSTRUCTIONS REFER TO BERED BOXES,  (7.5 SERIES HAS THE ITE SERIES" IN THE UPPER ER ALONG WITH THE ER ALONG WITH THE LED IN THE UPPER RIGHT D HAS THE QUADRANGLE
	ast date pool obs		107 Last		observed	4/24/07	2 INDICATE TO THAT THE POOL OF COMPONENTS WEE	
3 /	A. Evidence	: obligate	e amphib	ians Indica	ite date of obse	ervation.		ND BARE FOR CERTIFICA- SPECIES, PART C IS
1	= RARE SPECIES	COURTING ADULTS	SPERMATOPHORES	1	SALAMANDER LARVAE	TRANSFORMING JUVENILES	EITHER FOR ADDIT	IONAL INFORMATION FOR CERTIFICATION BY
	SPOTTED SALAMANDER		]				THE FACULTATIVE	SPECIES. IF CERTIFYING BY PROVIDE A PHOTOGRAPH
*	BLUE-SPOTTED SALAMANDER						OF THE POOL HOLE	OING WATER AND AT LEAST (OR AUDIO TAPE FOR
*	JEFFERSON SALAMANDER						FOR CERTIFICA	REEDING ACTIVITY, THON BY FACULTATIVE
*	MARBLED SALAMANDER		}				POOL HOLDING WA	PHOTOGRAPHS OF THE TER AND PHOTOGRAPHS
(	UNIDENTIFIED MOLE SALAMANDER						REQUIRED. ADDIT	É FACULTATIVE SPÉCIES AS IONALLY, PROVIDE A HE POOL WHEN DRY OR
		BREEDING	MATED	EGG	FROG	TRANSFORMING		THAT IT HAS NO FISH.
	WOOD FROG	CHORUS	PAIRS	MASSES 4(24	TADPOLES	JUVENILES	3 B. Evic	lence: fairy
*	SPADEFOOT TOAD		<u></u>	60-10	<u> </u>		shrimp	,
<u></u>		<del></del>					DATE OBSERVED -	
3 (	C. Evidence	: facultat	tive orgai	nisms Indi	icate date of ob	servation.		
* :	= RARE SPECIES	DATE OBSERVED	ACTIVITY	OBSERVEO			OATE OBSERVED	ACTIVITY OBSERVED
<u></u>	BREEDING SPRING PEEPERS				PAINTE	ED TURTLES		
	BREEDING GRAY TREEFROGS				SNAPPI	NG TURTLES		<del></del>
	BREEDING GREEN FROGS					EOUS DIVING LE LARVAE		
	BREEDING LEOPARD FROGS				WATER	SCORPIONS		
	BREEDING PICKERAL FROGS				DRAGON	IFLY NYMPHS		
	BREEDING AMERICAN TOADS				DAMSEL	FLY NYMPHS		
	BREEDING FOWLER'S TOADS				DOBSON	IFLY LARVAE		, , , <del>, , , , , , , , , , , , , , , , </del>
★ BFI	EEDING FOUR-TOED SALAMANDERS					GKG BEETLE		
	RED-SPOTTED NEWT (ADULTS)				CAL	DDISFLY		

# Instructions (continued)

- 4. INDICATE THE PHOTOGRAPHS BEING SUBMITTED. LABEL, DATE, AND SIGN ALL PHOTOS.
- 5. MARK THE POOL CLEARLY ON ALL MAPS. THE POOL MUST BE CLEARLY DISTINGUISHED FROM OTHER WETLANDS AND BE RELOCATEABLE BY OTHERS. PROVIDE ANY MAPS THAT WOULD HELP SOMEONE UNFAMILIAR WITH THE AREA LOCATE THE VERNAL POOL IN THE FIELD.
- 6. THE FORM MUST BE SIGNED. UNSIGNED SUBMISSIONS WILL BE RETURNED WITHOUT FURTHER ACTION,

#### OPTIONAL INFORMATION:

PROPERTY OWNER, PROVIDE INFORMATION ABOUT PROPERTY OWNER(S), IF KNOWN. IT IS RECOMMENDED THAT YOU BEEK PROPERTY OWNER PERMISSION PRIOR TO CERTIFICATION ACTIVITIES.

RARE SPECIES. A PHOTOGRAPH IS NECESSARY FOR DOCUMENTATION OF RARE SPECIES HABITAT.

DESCRIPTION. PROVIDE ANY INFORMATION THAT WILL DISTINGUISH THE POOL FROM OTHER WETLANDS (BOULDERS, DEBRIS, TREE SPECIES. ETC.).

See a thee hed

# 4. Photographs

MUST BE LABELED. DATED, AND SIGNED.

POOL HOLDING WATER

OBLIGATE +/OR FACULTATIVE SPECIES DRY POOL (REQUIRED FOR EVIDENCE 3C)

# Maps submitted

USGS TOPOGRAPHIC MAP (REQUIRED)

ONE OR MORE OF THE FOLLOWING:

AERIAL PHOTOGRAPH

DISTANCES/COMPASS DIRECTIONS

PROFESSIONAL SURVEY

LARGE SCALE TOPO OTHER

OPTIONAL EXTRA INFORMATION

SKETCH MAP OF AREA

ASSESSOR'S MAP

GPS LONGITUDE/LATITUDE COORDINATES

# Optional information

Although the following information is not required for certification, it is useful to NHERP to possibly better protect the vernal pool, its habitat and species.

Property owner

IT IS STRONGLY RECOMMENDED THAT LANDOWNER PERMISSION SECURITARIES PROFIT TO COLLECTING CERTIFICATION DOCUMENTATION.

Name

Address

species

Rare wetland VN WERE ANY RARE STATE-LISTED SPECIES OBSERVED USING THIS POOL ?

Y N IS A PHOTOGRAPH OF THE RARE SPECIES INCLUDED WITH THIS FILING?

# Description of pool and surroundings

DIMENSIONS: APPROXIMATE LENGTH 140

APPROXIMATE WIDTH

APPROXIMATE DEPTH

DESCRIBE DISTINCTIVE FEATURES (ROADS, STRUCTURES, BOULDERS, ETC.) WHICH ARE VISIBLE FROM OR NEAR THE POOL.

So' off park road noar "troste nism" electrical line running through besin

ARE THERE OTHER DISTINCTIVE FEATURES ABOUT THIS POOL (VEGETATION TYPES, ABANDONED VEHICLES, FOOT TRAILS, ETC.) THAT WOULD HELP SOMEONE RECOGNIZE IT?

# 6. Observer information & signature

Name

(UMASS State MH ZIP 01003

-SOB-813-8725

I hereby certify under the pains and penalties of perjury that the information contained in this report is true and complete to the best of my knowledge.

Danie Kause

### SEND COMPLETED FORM AND SUPPORTING DOCUMENTATION TO:

NH&ESP

VERNAL POOL CERTIFICATION MA DIVISION OF FISHERIES & WILDLIFE **ROUTE 135** 

WESTBOROUGH, MA 01581

All submissions and supporting documents will be retained by the Natural Heritage & Endangered Species Program. Information submitted on this form and other documents is part of the public record and is available to interested parties under the Ctate Benjamenta



# Natural Heritage & Endangered Species Program Massachusetts Division of Fisheries and Wildlife Vernal Pool Field Observation Form

la n				cation of Verna	1 001 1140 1144)	<i></i>		
1. Pool location	on "	Pool 4	4		Ü	ln	structions	
Town Age	wam "		County	,		FOR COMPLE CERTIFICATION, F	TE INFORMATION ABOUT IEFER TO GUIDELINES FOR F VERNAL POOL HABITAT.	
USGS Quadra		072.68	943 -	===	s 7.5' X 7.5' s 7.5' X 15'	REQUESTED IN BO	OF THE INFORMATION DXES 1-6. IF MORE SPACE TACH ADDITIONAL PAGES.	
WRITTEN DIRECTIONS	то Рооц: <u>\$r</u>	rall po	ol alor	3 Slo	le	INCLUDE ALL REC	SIGN THE FORM IN THE	
<sub>* 8</sub>	road	in pa	vK_			AREA PROVIDED	ON THE REVERSE SIDE.	
BE SUBMITTED	GPS	Farneli	holde	. 2000	)	WILL BE RETURNED.  THE FOLLOWING INSTRUCTIONS REFER EACH OF THE NUMBERED BOXES.		
	meson of		THE 7.5 X 7.5 SERIES HAS THE LEGEND "7.5 MINUTE SERIES" IN THE UPPER					
		. 3, -c.	<u> </u>	(lies appropria		QUADRANGLE NAM	NER ALONG WITH THE ME. THE 7.5 X 15 MINUTE ELEO IN THE UPPER RIGHT	
				(USE ADDITIONAL PAG	ES, IF NECESSARY.)	HAND CORNER AN	ID HAS THE QUADRANGLE VER RIGHT CORNER.	
2. Observatio	n dates	First date	e pool/species	nhearvert	4/24/07		ECTIONS MUST BE INCLUDED.	
Last date pool ob		107 Last	date species o	bserved	4/24(07)		THE FIRST AND LAST DATES OR ITS BIOLOGICAL RE OBSERVED.	
3 A. Evidence	: obligate	e amphib	ians Indicat	e date of obse	rvation.		AND BARE FOR CERTIFICA- SPECIES. PART C IS	
* = RARE SPECIES	COURTING ADULTS	SPERMATOPHORES	EGG MASSES	SALAMANDER LARVAE	TRANSFORMING JUVENILES	EITHER FOR ADDI	TIONAL INFORMATION P FOR CERTIFICATION BY	
SALAMANDER						THE FACULTATIVE	SPECIES. IF CERTIFYING BY	
* BLUE-SPOTTED SALAMANDER						OF THE POOL HOL	DING WATER AND AT LEAST	
★ JEFFERSON     SALAMANDER						CHORUSING) OF E	BREEDING ACTIVITY. BATION BY FACULTATIVE	
* MARBLED SALAMANDER						POOL HOLDING W	E PHOTOGRAPHS OF THE ATER AND PHOTOGRAPHS	
UNIDENTIFIED MOLE SALAMANDER	1					REQUIRED. ADDI	HE FACULTATIVE SPECIES AS TIONALLY, PROVIDE A	
	BREEDING	MATED	EGG	FROG	TRANSFORMING		THE POOL WHEN DRY OR E THAT IT HAS NO FISH.	
		PAIRS	MASSES	TADPOLES	JUVENILES	3 B Evi	donos: foin.	
WOOD FROG	CHORUS		८ १८५			I O D. LYII	Jence Milv	
WOOD FROG	CHORDS		5 464			shrimp	dence: fairy	
* SPADEFOOT TOAD			2			Shrimp DATE OBSERVED —	dence. rarry	
* SPADEFOOT TOAD		ive orgar	2	cate date of ob	servation.	shrimp	dence. rarry	
* SPADEFOOT TOAD  3 C. Evidence  * = RARE SPECIES		ive organ	nisms <sub>Indic</sub>	cate date of ob	servation.	shrimp	ACTIVITY OBSERVED	
* SPADEFOOT TOAD  3 C. Evidence  * = RAPE SPECIES  BREEDING SPRING PEEPERS	e: facultat		nisms <sub>Indic</sub>	<u></u>	Servation.	Shrimp DATE OBSERVED  DATE		
* SPADEFOOT TOAD  3 C. Evidence  * = RAPE SPECIES  BREEDING	e: facultat		nisms <sub>Indic</sub>	PAINTE		Shrimp DATE OBSERVED  DATE		
* SPADEFOOT TOAD  3 C. Evidence  * = RAPE SPECIES  BREEDING SPRING PEEPERS  BREEDING	e: facultat		nisms <sub>Indic</sub>	PAINTE SNAPPII PREDACE	D TURTLES  KG TURTLES  COUS DIVING	Shrimp DATE OBSERVED  DATE		
* SPADEFOOT TOAD  3 C. Evidence  * = RARE SPECIES  BREEDING SPRING PEEPERS  BREEDING GRAY TREEFROGS  BREEDING	e: facultat		nisms <sub>Indic</sub>	PAINTE SNAPPII PREDACI BEETL	D TURTLES	Shrimp DATE OBSERVED  DATE		
* SPADEFOOT TOAD  3 C. Evidence  * = RARE SPECIES  BRIEDING SPRING PÉÉPERS  BREEDING GRAY TREEFROGS  BREEDING GREEN FROGS  BREEDING	e: facultat		nisms <sub>Indic</sub>	PAINTE SNAPPII PREDACE BEETL WATER	D TURTLES  KG TURTLES  COUS DIVING E LARVAE	Shrimp DATE OBSERVED  DATE		
* SPADEFOOT TOAD  3 C. Evidence  * = RARE SPECIES  BREEDING SPRING PEEPERS  BREEDING GRAY TREEFROOS  BREEDING GREEN FROOS  BREEDING LEOPARD FROOS  BREEDING BREEDING BREEDING	e: facultat		nisms <sub>Indic</sub>	PAINTE SNAPPIR PREDACE BEETL WATER DRAGON	D TURTLES  KG TURTLES  COUS DIVING  E LARVAE  SCORPIONS	Shrimp DATE OBSERVED  DATE		
* SPADEFOOT TOAD  3 C. Evidence  * = RAPE SPECIES  BREEDING SPRING PEEPERS  BREEDING GRAY TREEFROGS  BREEDING GREEN FROGS  BREEDING LEOPARD FROGS  BREEDING PICKERAL FROGS  BREEDING	e: facultat		nisms <sub>Indic</sub>	PAINTE SNAPPIR PREDACE BEETL WATER DRAGON	D TURTLES  KG TURTLES  COUS DIVING E LARVAE  SCORPIONS  FLY NYMPHS	Shrimp DATE OBSERVED  DATE		
* SPADEFOOT TOAD  3 C. Evidence  * = RARE SPECIES  BREEDING SPRING PEEPERS  BREEDING GRAY TREEFROGS  BREEDING GREEN FROGS  BREEDING LEOPARD FROGS  BREEDING PICKERAL FROGS  BREEDING AMERICAN TOADS  BREEDING AMERICAN TOADS	e: facultat		nisms <sub>Indic</sub>	PAINTE SNAPPIR PREDACI BEETL WATER DRAGON DAMSELI DOBSON WHIRLK	D TURTLES  KG TURTLES  COUS DIVING E LARVAE  SCORPIONS  FLY NYMPHS	Shrimp DATE OBSERVED  DATE		
* SPADEFOOT TOAD  3 C. Evidence  * = RARE SPECIES  BREEDING SPRING PEEPERS  BREEDING GRAY TREEFROGS  BREEDING GREEN FROGS  BREEDING LEOPARD FROGS  BREEDING PICKERAL FROGS  BREEDING AMERICAN TOADS  BREEDING FOWLER'S TOADS  * BREEDING FOUR-TOED	e: facultat		nisms <sub>Indic</sub>	PAINTE SNAPPIR PREDACE BEETL WATER DRAGON DAMSELI DOBSON WHIRLK	D TURTLES  KG TURTLES  COUS DIVING E LARVAE  SCORPIONS  FLY NYMPHS  FLY NYMPHS  FLY LARVAE  KG BEETLE	Shrimp DATE OBSERVED  DATE		
* SPADEFOOT TOAD  3 C. Evidence  * = RARE SPECIES  BREEDING SPRING PEEPERS  BREEDING GREN FROSS  BREEDING LEOPARD FROGS  BREEDING PICKERAL FROGS  BREEDING AMERICAN TOADS  BREEDING FOWLER'S TOADS  * BREEDING FOUR-TOED SALAMANDERS  RED-SPOTTED	e: facultat		nisms <sub>Indic</sub>	PAINTE SNAPPIR PREDACE BEETL WATER DRAGON DAMSELF DOBSON WHIRLK LA CAAC	D TURTLES  KG TURTLES  COUS DIVING E LARVAE  SCORPIONS  FLY NYMPHS  FLY NYMPHS  FLY LARVAE  RIG BEETLE  RVAE  DISFLY	Shrimp DATE OBSERVED  DATE		

# Instructions (continued)

4. INDICATE THE PHOTOGRAPHS BEING SUBMITTED. LABEL, DATE, AND SIGN ALL PHOTOS.

5. MARK THE POOL CLEARLY ON ALL MAPS. THE POOL MUST BE CLEARLY DISTINGUISHED FROM OTHER WETLANDS AND BE RELOCATEABLE BY OTHERS. PROVIDE ANY MAPS THAT WOULD HELP SOMEONE UNFAMILIAR WITH THE AREA LOCATE THE VERNAL POOL IN THE FIELD.

6. THE FORM MUST BE SIGNED. UNSIGNED SUBMISSIONS WILL BE RETURNED WITHOUT FURTHER ACTION.

OPTIONAL INFORMATION:

PROPERTY OWNER. PROVIDE INFORMATION ABOUT PROPERTY OWNER(s), IF KNOWN. IT IS RECOMMENDED THAT YOU SEEK PROPERTY OWNER PERMISSION PRIOR TO CERTIFICATION ACTIVITIES.

RARE SPECIES. A PHOTOGRAPH IS NECESSARY FOR DOCUMENTATION OF RARE SPECIES HABITAT.

DESCRIPTION. PROVIDE ANY INFORMATION THAT WILL DISTINGUISH THE POOL FROM OTHER WETLANDS (BOULDERS, DEBRIS, TREE SPECIES, ETC.).

Sepattechal

	ographs	MUST BE LABELED, DATED, AND SIGNED.	_
•(	POOL HOLDING WA	ater Acultative species	

0-	—X	DRY POOL (REQUIRED FOR EVIDENCE 3C)
(5)	Мар	s submitted
i	$\nabla$	USGS TOPOGRAPHIC MAP (REQUIRED)
	(AND C	NE OR MORE OF THE FOLLOWING:
	<b>X</b>	AERIAL PHOTOGRAPH
		DISTANCES/COMPASS DIRECTIONS
		PROFESSIONAL SURVEY
		LARGE SCALE TOPO
		OTHER
	оетю	NAL EXTRA INFORMATION
	<b>[X</b> ]	SKETCH MAP OF AREA
		ASSESSOR'S MAP
	X	GPS LONGITUDE/LATITUDE COORDINATES

Barrie Vace

Optional information	Although the following information is not required for certification, it is useful to NHESP to possibly better protect the vernal pool, its habitat and species.	7
Property owner	THE STRONGLY RECOMMENDED THAT LANDOWNER PERMISSION SE OBTAINED PROR TO COLLECTING CERTIFICATION DOCUMENTATION.	
Name DCR		
Address North S	itreet	
Robinsan	State Park	
Town Agavam	State MA ZIP 01001	
Rare wetland MN	WERE ANY RARE STATE-LISTED SPECIES OBSERVED USING THIS POOL?	2
enocioo		
Species	IS A PHOTOGRAPH OF THE RARE SPECIES INCLUDED WITH THIS FILING?	
Species	THIS FILING?	_

DIMENSIONS: APPROXIMATE LENGTH 260' APPROXIMATE WIDTH 66

APPROXIMATE DEPTH

DESCRIBE DISTINCTIVE FEATURES (ROADS, STRUCTURES, BOULDERS, ETC.) WHICH ARE VISIBLE FROM OR NEAR THE POOL.

Small pool along Side of Yourd in park

ARE THERE OTHER DISTINCTIVE FEATURES ABOUT THIS POOL (VEGETATION TYPES, ABANDONED VEHICLES, FOOT TRAILS, ETC.) THAT WOULD HELP SOMEONE RECOGNIZE IT?

6.	Observer information & signature
	Name David Paulsan
	Address Holdswarth Itall
	Holdsworth Way (UMASS)
	Town Anaherst State MA ZIP C1003
	Telephone 1-508-813-8725
	e-mail DPAULSON@ACAD.UMASS.EQU
The	ereby certify under the pains and penalties of perjury that the information

contained in this report is true and complete to the best of my knowledge.

SEND COMPLETED FORM AND SUPPORTING DOCUMENTATION TO:

NH&ESP
VERNAL POOL CERTIFICATION
MA DIVISION OF FISHERIES & WILDLIFE

Route 135 Westborough, MA 01581

All submissions and supporting documents will be retained by the Natural Heritage & Endangered Species Program. Information submitted on this form and other documents is part of the public record and is available to interested parties



# Natural Heritage & Endangered Species Program Massachusetts Division of Fisheries and Wildlife Vernal Pool Field Observation Form

(7/99)	(		delines for Certifi	cation of Verna	ıl Pool Habitat)	/	For office use only
1. Pool location	on	" Pool	3 "		ν		Instructions
Town Aga	wam	149.10	County			CERTIFICATION	PLETE INFORMATION ABOUT I, REFER TO GUIDELINES FOR I OF VERNAL POOL HABITAT.
USGS Quadra	ngle name ( <u>)</u>	<u>, 600 F</u>	<u>ଃ</u> ଥି		s 7.5' X 7.5' s 7.5' X 15'	REQUESTED IN IS REQUIRED,	ALL OF THE INFORMATION I BOXES 1-6. IF MORE SPACE ATTACH ADDITIONAL PAGES.
WRITTEN DIRECTIONS	TO POOL:	the r	nilion/s	tone b	ine"	DOCUMENTATK AREA PROVIDE	REQUIRED PHOTOGRAPHS AND ON. SIGN THE FORM IN THE ED ON THE REVERSE SIDE. OR UNSKINED SUBMISSIONS
SUBMITTEE	<u> </u>	,w pa	21,	——————————————————————————————————————		WILL BE RETU	
BE SUBMITTE TO STATE OF STATE	GPS Fo.	mető	holdd.de	2ddd		EACH OF THE	NUMBERED BOXES.
age and a second	10000 C	-64-1	Pas	K		LEGEND "7.5 I	.5 X 7.5 SERIES HAS THE MINUTE SERIES" IN THE UPPER
	" 5001	2100	<u> </u>			QUADRANGLE I	CORNER ALONG WITH THE NAME. THE 7.5 X 15 MINUTE
			· · · · · · · · · · · · · · · · · · ·	(USE ADDITIONAL PAGE	DES, IF NECESSARY.)	HAND CORNER	LABELED IN THE UPPER RIGHT AND HAS THE QUADRANGLE
2. Observatio	n dates	Pinak alak	l/n i		4/24/07		LOWER RIGHT CORNER. DIRECTIONS <b>MUST</b> BE INCLUDED
Last date pool obs	served 10/	1 -	e pool/species date species d		4/24/07	2 INDICAT	TE THE FIRST AND LAST DATES OL OR ITS BIOLOGICAL
						COMPONENTS	WERE OBSERVED.
3 A. Evidence		e amphib				TION BY OBLIG	A AND BARE FOR CERTIFICA- ATE SPECIES. PART C IS
* = RARE SPECIES  SPOTTED	COURTING ADULTS	SPERMATOPHORES	EGG MASSES	SALAMANDER LARVAE	TRANSFORMING JUVENILES	(APPRECIATED)	ODITIONAL INFORMATION OR FOR CERTIFICATION BY
SALAMANDER		<u> </u>				OBLIGATE SPEC	ive species. If certifying by Cies, provide a photograph
* BLUE-SPOTTED SALAMANDER						ONE PHOTOGRA	HOLDING WATER AND AT LEAST APH (OR AUDIO TAPE FOR
★ JEFFERSON     SALAMANDER						CHORUSING) O	F BREEDING ACTIVITY.  FICATION BY FACULTATIVE
* MARBLED SALAMANDER	ļ					POOL HOLDING	/IDE PHOTOGRAPHS OF THE WATER AND PHOTOGRAPHS
UNIDENTIFIED MOLE SALAMANDER		<del>                                     </del>				REQUIRED. A	THE FACULTATIVE SPECIES AS DOITIONALLY, PROVIDE A
ONEMBARDER	BREEDING	MATED	EGG	FROG	TRANSCORMING		OF THE POOL WHEN DRY OR OVE THAT IT HAS NO FISH.
W000 F000	CHORUS	PAIRS	MASSES	TADPOLES	TRANSFORMING JUVENILES	3 D E	idonos: foina
WOOD FROG	<u> </u>		62+ 767			shrimp	vidence: fairy
* SPADEFOOT TOAD		<u> </u>				DATE OBSERVED	
3 C. Evidence	: facultat	tive organ	nisms India	cate date of ob	servetion		
* = RARE SPECIES	DATE	ACTIVITY (			(	DATE	ACTIVITY OBSERVED
BREEDING SPRING PEEPERS				PAINTE	D TURTLES	OBSERVED	
BREEDING GRAY TREEFROGS				SNAPPI	NG TURTLES		
BREEDING		<del>                                     </del>		PREDAC	EOUS DIVING		
GREEN FROGS  BREEDING				<del></del>	E LARVAE SCORPIONS		
LEOPARD FROGS BREEDING					FLY NYMPHS	<del> </del>	
PICKERAL FROGS BREEDING							* ***
AMERICAN TOADS BREEDING				DAMSEL	FLY NYMPHS		
FOWLER'S TOADS  BREEDING FOUR-TOED					IFLY LARVAE		
SALAMANDERS	·				GIG BEETLE ARVAE		
RED-SPOTTED NEWT (ADULTS)		}	ľ		DDISFLY		
<del></del>				L/	ARVAE		

# Instructions (continued)

- 4. INDICATE THE PHOTOGRAPHS BEING SUBMITTED. LABEL, DATE, AND SIGN ALL PHOTOS.
- 5. MARK THE POOL CLEARLY ON ALL MAPS. THE POOL MUST BE CLEARLY DISTINGUISHED FROM OTHER WETLANDS AND BE RELOCATEABLE BY OTHERS. PROVIDE ANY MAPS THAT WOULD HELP SOMEONE UNFAMILIAR WITH THE AREA LOCATE THE VERNAL POOL IN THE FIELD.
- 6. THE FORM MUST BE SIGNED. UNSIGNED SUBMISSIONS WILL BE RETURNED WITHOUT FURTHER ACTION.

### OPTIONAL INFORMATION:

PROPERTY OWNER. PROVIDE INFORMATION ABOUT PROPERTY OWNER(S), IF KNOWN. IT IS RECOMMENDED THAT YOU BEEK PROPERTY OWNER PERMISSION PRIOR TO CERTIFICATION ACTIVITIES.

RARE SPECIES. A PHOTOGRAPH IS NECESSARY FOR DOCUMENTATION OF RARE SPECIES HABITAT.

DESCRIPTION. PROVIDE ANY INFORMATION THAT WILL DISTINGUISH THE POOL FROM OTHER WETLANDS (BOULDERS, DEBRIS, TREE SPECIES,

# techa

# 4. Photographs

MUST BE LABELED. DATED, AND SIGNED.



POOL HOLDING WATER

OBLIGATE +/OR FACULTATIVE SPECIES

# DRY POOL (REQUIRED FOR EVIDENCE 3C)

# Maps submitted

USGS TOPOGRAPHIC MAP (REQUIRED)

WIG ONE OR MORE OF THE FOLLOWING:



AERIAL PHOTOGRAPH

DISTANCES/COMPASS DIRECTIONS

PROFESSIONAL SURVEY

LARGE SCALE TOPO

OTHER

#### OPTIONAL EXTRA INFORMATION

SKETCH MAP OF AREA

ASSESSOR'S MAP

GPS LONGITUDE/LATITUDE COORDINATES

# Optional information

Although the following information is not required for certification, it is useful to NHESP to possibly better protect the vernal pool, its habitat and species.

# Property owner

THE STRONGLY RECOMMENDED THAT LANDOWNER PERMISSION HE OBTAINED PRIOR TO COLLECTING CERTIFICATION DOCUMENTATION.

Name

North

State MA ZIP CLOOL

species

Rare wetland Y N WERE ANY RARE STATE-LISTED SPECIES OBSERVED USING THIS POOL?

Y N IS A PHOTOGRAPH OF THE RARE SPECIES INCLUDED WITH THIS FILING?

# Description of pool and surroundings

DIMENSIONS: APPROXIMATE LENGTH 450 APPROXIMATE WIDTH 85

APPROXIMATE DEPTH 1855 Va M

DESCRIBE DISTINCTIVE FEATURES (ROADS, STRUCTURES, BOULDERS, ETC.) WHICH ARE VISIBLE FROM OR NEAR THE POOL.

Largo shallow pool

ARE THERE OTHER DISTINCTIVE FEATURES ABOUT THIS POOL (VEGETATION TYPES, ASANDONED VEHICLES, FOOT TRAILS, ETC.) THAT WOULD HELP SOMEONE RECOGNIZE IT?

# 6. Observer information & signature

State M/ ZIP 01003

Telephone 1-508 -813-8725

PAULSON® ACAD.UMASS. EQ

I hereby certify under the pains and penalties of perjury that the information contained in this report is true, and complete to the best of my knowledge.

#### SEND COMPLETED FORM AND SUPPORTING DOCUMENTATION TO:

# NH&ESP

VERNAL POOL CERTIFICATION MA DIVISION OF FISHERIES & WILDLIFE ROUTE 135

WESTBOROUGH, MA 01581

All submissions and supporting documents will be retained by the Natural Heritage & Endangered Species Program. Information submitted on this form and other documents is part of the public record and is available to interested parties under the Otate Decimente



\* SPOTTED TURTLES

# Natural Heritage & Endangered Species Program Massachusetts Division of Fisheries and Wildlife Vernal Pool Field Observation Form

	(7/99)	(I	for use with Gui	delines for Certifi	ication of Verna	l Pool Habitat)		For office use only
1.	Pool location	on " $P_o$	ol 1"			2	۱۱	nstructions
	Town Age	<u>awan</u>	1/15 63 -		Hampa		CERTIFICATION,	ETE INFORMATION ABOUT REFER TO GUIDELINES FOR OF VERNAL POOL HABITAT.
	USGS Quadrai	Meman elgn ✓		62 085 State	SERNE	s 7.5' X 7.5' s 7.5' X 15'	REQUESTED IN E	L OF THE INFORMATION BOXES 1-6. IF MORE SPACE TTACH ADDITIONAL PAGES, COURED PHOTOGRAPHS AND
NO. CEL				along f			DOCUMENTATION AREA PROVIDED	I. Sign the form in the ON the reverse side. I UNSIGNED SUBMISSIONS
INFORMATION BE SUBMITTED	Crish +	-hand s	(مان	<u> </u>				WING INSTRUCTIONS REFER TO UMBERED BOXES.
THES IN	GPS Fo	rmat?	P999	. <i>d</i> dddd	(Use additional pag	NES, IF NECESSARY.)	LEGEND "7.5 MI RIGHT HAND CO QUADRANGLE NA SERIES IS SO LA	X 7.5 SERIES HAS THE NUTE SERIES" IN THE UPPER RNER ALONG WITH THE IME. THE 7.5 X 15 MINUTE IBELED IN THE UPPER RIGHT
2	Observatio	n dotos				./ / ٧	NAME IN THE LO	ND HAS THE QUADRANGLE WER RIGHT CORNER. RECTIONS <b>MUST</b> BE INCLUDED
			First dat			<u> / २५/२०७</u> ७		THE FIRST AND LAST DATES
	ast date pool obs			date species			THAT THE POOL.	OR ITS BIOLOGICAL ERE OBSERVED.
3 A	N. Evidence	e: obligate	e amphib	ians Indica	te date of obse	ervation.	3. PART A	AND BARE FOR CERTIFICA-
* =	RARE SPECIES	COURTING ADULTS	SPERMATOPHORES	MASSES	SALAMANDER LARVAE	TRANSFORMING JUVENILES		OFFICE CERTIFICATION BY
	SPOTTED SALAMANDER			24/24	•		THE FACULTATIV	E SPECIES. IF CERTIFYING BY
*	BLUE-SPOTTED SALAMANDER						OF THE POOL HO	OLDING WATER AND AT LEAST PH (OR AUDIO TAPE FOR
*	JEFFERSON SALAMANDER						CHORUSING) OF FOR CERTIF	BREEDING ACTIVITY.
*	MARBLED SALAMANDER						POOL HOLDING (	DE PHOTOGRAPHS OF THE WATER AND PHOTOGRAPHS
U	NIDENTIFIED MOLE SALAMANDER						REQUIRED. ADD	THE FACULTATIVE SPECIES AS DITIONALLY, PROVIDE A
		BREEDING	MATEO	EGG	FROG	TRANSFORMING		THE POOL WHEN DRY OR VE THAT IT HAS NO FISH.
	WOOD FROG	CHORUS	PAIRS	TUTC 4/24	TADPOLES	JUVENILES	3 B. Ev	idence: fairy
* S	SPADEFOOT TOAD						shrimp	,
2 (	` Evidonos	· focultat	ivo orga	oiomo			DATE OBSERVED	
	C. Evidence	DATE	<u>_</u>		cate date of ob	e <b>servation</b> .	DITC T	
* =	BREEDING	OBSERVED	<del></del>	OBSERVED	J		DATE OBSERVED	ACTIVITY OBSERVED
	BPRING PEEPERS BREEDING	7129	Present	in paul	-	O TURTLES		
G	RAY TREEFROGS BREEDING	11/2/1			ļ	NG TURTLES EOUS DIVING		
	GREEN FROGS BREEDING	4/24	Present	in pool		E LARVAE		
	EOPARD FROGS BREEDING				WATER	SCORPIONS		
P	PICKERAL FROGS BREEDING				DRAGON	FLY NYMPHS		
A	MERICAN TOADS		·		DAMSEL	FLY NYMPHS		***************************************
	BREEDING OWLER'S TOADS				DOBSON	IFLY LARVAE		
	EDING FOUR-TOED SALAMANDERS					GIG BEETLE ARVAE		
	RED-SPOTTED NEWT (ADULTS)					DDISFLY		

LEECHES

# Instructions (continued)

- 4. INDICATE THE PHOTOGRAPHS BEING SUBMITTED. LABEL, DATE, AND SIGN ALL PHOTOS.
- 5. MARK THE POOL CLEARLY ON ALL MAPS. THE POOL MUST BE CLEARLY DISTINGUISHED FROM OTHER WETLANDS AND BE RELOCATEABLE BY OTHERS. PROVIDE ANY MAPS THAT WOULD HELP SOMEONE UNFAMILIAR WITH THE AREA LOCATE THE VERNAL POOL IN THE FIELD.
- 6. THE FORM MUST BE SIGNED. UNSIGNED SUBMISSIONS WILL BE RETURNED WITHOUT FURTHER ACTION.

#### OPTIONAL INFORMATION:

PROPERTY OWNER. PROVIDE INFORMATION ABOUT PROPERTY OWNER(S), IF KNOWN. IT IS RECOMMENDED THAT YOU SEEK PROPERTY OWNER PERMISSION PRIOR TO CERTIFICATION ACTIVITIES.

PARE SPECIES. A PHOTOGRAPH IS NECESSARY FOR DOCUMENTATION OF RARE SPECIES HABITAT.

DESCRIPTION. PROVIDE ANY INFORMATION THAT WILL DISTINGUISH THE POOL FROM OTHER WETLANDS (BOULDERS, DEBRIS, THEE SPECIES,

See , Hachod stoots

# 4. Photographs

MUST BE LABELED, DATED, AND SIGNED.

POOL HOLDING WATER

OBLIGATE +/OR FACULTATIVE SPECIES DRY POOL (REQUIRED FOR EVIDENCE 3C)

# (5.) Maps submitted

USGS TOPOGRAPHIC MAP (REQUIRED)

IP ONE OR MORE OF THE FOLLOWING:

AERIAL PHOTOGRAPH

DISTANCES/COMPASS DIRECTIONS

PROFESSIONAL SURVEY

LARGE SCALE TOPO

OTHER

OPTIONAL EXTRA INFORMATION

SKETCH MAP OF AREA ASSESSOR'S MAP

GPS LONGITUDE/LATITUDE COORDINATES

See Frent

# Optional information

Although the following information is not required for certification, it is useful to NHESP to possibly better protect the vernal pool, its habitat and species.

Property owner

Name

Address

Town Haguer

State MA ZIP 6100

Rare wetland Y N WERE ANY RARE STATE-LISTED SPECIES OBSERVED species

YN

IS A PHOTOGRAPH OF THE RARE SPECIES INCLUDED WITH

# Description of pool and surroundings

DIMENSIONS: APPROXIMATE LENGTH 258 APPROXIMATE WIDTH 63

APPROXIMATE DEPTH

DESCRIBE DISTINCTIVE FEATURES (ROADS, STRUCTURES, BOULDERS, ETC.) WHICH ARE VISIBLE FROM OR NEAR THE POOL,

Long-narrow pool fire road

ARE THERE OTHER DISTINCTIVE FEATURES ABOUT THIS POOL (VEGETATION TYPES, ABANDONED VEHICLES, FOOT TRAILS, ETC.) THAT WOULD HELP SOMEONE RECOGNIZE IT?

# 6. Observer information & signature

State MA ZIP 01003

Telephone

DPAULSON@ACAD.UMASS.EDU

I hereby certify under the pains and penalties of perjury that the information contained in this report is true, and complete to the best of my knowledge.

Pari Vaus

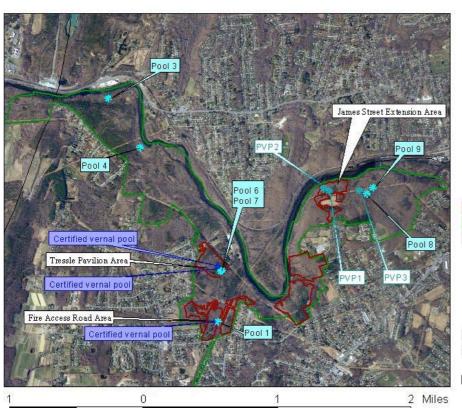
#### SEND COMPLETED FORM AND SUPPORTING DOCUMENTATION TO:

## NH&ESP

VERNAL POOL CERTIFICATION MA DIVISION OF FISHERIES & WILDLIFE ROUTE 135 Westborough, MA 01581

All submissions and supporting documents will be retained by the Natural Heritage & Endangered Species Program. Information submitted on this form and other documents is part of the public record and is available to interested parties

# Robinson State Park Vernal Pools





Certifiable Vernal Pools 2007
Possible Vernal Pools for revisit
Certified Vernal Pools, Robinson
Original Timber Sale areas
Robinson State Park Boundary
Town boundaries

Data: NHESP, DCR, and MassGIS Background:

MassGIS 2005 Orthophoto Map Created: March 6, 2008



# Division of Fisheries & Wildlife

Wayne F. MacCallum, Director

Suidelines for the Certification of Vernal Pool Habitat

## **Vernal Pool Fact Sheet**

#### WHAT ARE VERNAL POOLS?

Vernal pools are temporary bodies of fresh water that provide critical habitat for many vertebrate and invertebrate wildlife species. "Vernal" means spring, and indeed, many vernal pools are filled by spring rains and snowmelt, only to dry up during the hot, dry months of summer. However, many vernal pools are filled by the rains of autumn and may persist throughout the winter. Vernal pools are quite often very small and shallow; vernal pools that support rich communities of vertebrate and invertebrate animals may measure only a few yards across. However, vernal pools of several acres occur throughout Massachusetts.

## WHERE ARE VERNAL POOLS FOUND?

Vernal pools are common in Massachusetts, occurring in every town in the state. Vernal pools are found across the landscape where small woodland depressions, swales or kettle holes collect spring runoff or intercept seasonally high groundwater tables. Although many people associate vernal pools only with dry woodland areas, vernal pools also occur in meadows, river floodplains, interdunal swales, and large vegetated wetland complexes. Vernal pool habitat occurs wherever water is contained for more than 2 months in the spring and summer of most years and where no fish are present.

### WHY ARE VERNAL POOLS VALUABLE?

Vernal pools constitute a unique and increasingly vulnerable type of wetland. Vernal pools are inhabited by many species of wildlife, some of which are totally dependent on vernal pools for their survival. Vernal pools do not support fish because they dry out annually or at least periodically. Some may contain water year round, but are free of fish as a result of significant drawdowns that result in extremely low dissolved oxygen levels. The wood frog (*Rana sylvatica*) and the four local species of mole salamander (*Ambystoma* spp.) have evolved breeding strategies intolerant of fish predation on their eggs and larvae; the lack of

Sama	state-listed	enociae	that	may h	a faund	in	vornal	naale

<b>Species</b> Blue-spotted salamander ( <i>Ambystoma laterale</i> ) <sup>2</sup> Jefferson salamander ( <i>Ambystoma jeffersonianum</i> ) <sup>2</sup> Marbled salamander ( <i>Ambystoma opacum</i> ) <sup>2</sup> Four-toed salamander ( <i>Hemidactylium scutatum</i> ) <sup>3</sup> Eastern spadefoot toad ( <i>Scaphiopus holbrookii</i> ) <sup>2</sup>	Status <sup>1</sup> S C S C T S C T
Spotted turtle ( <i>Clemmys guttata</i> ) <sup>3</sup>	S C
Wood turtle ( <i>Clemmys insculpta</i> ) <sup>3</sup>	S C
Blanding's turtle ( <i>Emydoidea blandingii</i> ) <sup>2</sup>	T

- <sup>1</sup> Status pursuant to the MA Endangered Species Act T: Threatened; SC: Special Concern
- <sup>2</sup> Obligate species require vernal pool habitat to successfully breed
- <sup>3</sup> Facultative species may use vernal pools but do not require them

fish populations is essential to the breeding success of these species. Other amphibian species, including the American toad (*Bufo americanus*), green frog (*Rana clamitans*), and the red-spotted newt (*Notophthalmus viridescens*), often exploit the fish-free waters of vernal pools but do not depend on them. Vernal pools also support rich and diverse invertebrate faunas. Some invertebrate species, such as fairy shrimp (*Eubranchipus* spp.), are also entirely dependent upon vernal pool habitat. Invertebrates are both important predators and prey in vernal pool ecosystems. Vernal pools are an important habitat resource for many birds, mammals, reptiles and amphibians, including many state-listed rare species.

### **VERNAL POOL PROTECTION**

The Massachusetts Wetlands Protection Act Regulations (310 CMR 10.00), the Massachusetts Surface Water Ouality Standards (314 CMR 4.00) used to administer section 401 of the federal Clean Water Act, the Massachusetts Environmental Code: Title 5, and the Forest Cutting Practices Act regulations all provide protection to vernal pools that have been officially certified. The regulations for both the Wetlands Protection Act and Forest Cutting Practices Act also provide protection to vernal pools that have not been certified if their occurrence is adequately documented during permit review. Protection under any of these laws requires the following:

- 1) the vernal pool occurs in an area subject to the jurisdiction of the regulations; and
- 2) the activities proposed are regulated.

The Massachusetts Wetlands Protection Act regulations (310 CMR 10.00) protect certified vernal pools and up to 100 feet beyond the boundary of the pool (referred to as the "vernal pool habitat"), by preventing alterations which would result in the reduction of the wildlife habitat value of the certified vernal pool. A certified vernal pool is not automatically protected by these regulations, though. Certified vernal pools must occur within a resource area that comes under the jurisdiction of the Act before they receive protection. Similarly, the 100 feet around the vernal pool does not extend into non-jurisdictional upland or the buffer zone of a resource area. Though the regulations specify performance standards for vernal pools that are located in Bordering or Isolated Land Subject to Flooding (BLSF and ILSF respectively), vernal pools that occur within any wetland resource area are protected for their wildlife habitat value under the Wetlands Protection Act. Performance standards may be applied by a conservation commission to protect vernal pools that occur in any jurisdictional wetland resource area.

Vernal pools that are not certified may also be protected by a local conservation commission or the DEP if credible scientific evidence is presented up until the end of the appeals period for a Superseding Order of Conditions issued by the DEP. A conservation commission, or the DEP on appeal, can incorporate protective conditions into an Order of Conditions that would prevent the alteration of the wildlife habitat value of the pool and its 100 foot "vernal pool habitat" if they occur within a regulated wetland even though it is not certified.

Each DEP Regional Office has at least one Vernal Pool Liaison who should be contacted for all questions related to the protection of both certified and uncertified vernal pools. Since regulatory authority rests with the Department, they are best able to answer questions about what may or may not happen in or around vernal pools. Your regional liaison may be reached at the following addresses:

Northeast Regional Office Southeast Regional Office

Wavne Lozzi Daniel Gilmore 20 Riverside Drive 203-A Lowell Street Wilmington, MA 01887 Lakeville, MA 02347 (978) 661-7600 (508) 946-2700

Central Regional Office Western Regional Office

Marielle Stone Karen Hirschburg State House West, 4th Floor 627 Main Street

Worcester, MA 01608 Springfield, MA 01103

(508) 792-7650 (413) 748-1100 The Massachusetts Surface Water Quality Standards (314 CMR 4.00) administer Section 40l of the federal Clean Water Act and protect certified vernal pools. Under these regulations, any certified vernal pool is classified as an Outstanding Resource Water (ORW). The regulations, administered by the DEP, strictly prohibit discharges of solid or liquid fill within certified vernal pools. Storm drainage from roads and rooftops as well as solid fill are prohibited within the boundaries of the pool. As is the case with the Wetlands Protection Act however, the certified vernal pool as well as the proposed activity must be within the jurisdiction of these regulations - the state's Clean Water Act - before it receives this protection.

**The Massachusetts Environmental Title 5 (310 CMR 15.000)** regulates the siting and construction of subsurface sewage disposal (septic) systems in the state. A system's septic tank and distribution box must be located a minimum of 50 feet, and the leaching field a minimum of 100 feet, from the boundary of a certified vernal pool.

The Massachusetts Forest Cutting Practices Act Regulations (3.04 CMR 11.00) protect certified vernal pools from certain forestry impacts. Harvesting requirements limit cutting to no more than 50% of the trees within 50 feet of a certified vernal pool. They also require that trees or tree tops not be felled in certified vernal pools, and restrict the use of pools as staging areas or skidder trails. Guidelines, similar to the regulations, are established for activities planned near uncertified vernal pools identified by consulting foresters.

## THE VERNAL POOL BOUNDARY

The extreme edges of vernal pool habitat represent one of the most ecologically valuable portions of these habitats. Shallow water at the edge of a pool is generally the first to thaw in the spring. This provides early access to the pool for the earliest breeding species. The shallow water zones also tend to be significantly warmer than the deeper portions of a vernal pool throughout the spring. Egg masses of early breeding amphibians benefit from the warmer water temperatures at the pool edges that promote rapid egg development.

The boundary of vernal pool habitat must incorporate the shallowest reaches of the pool. Where there is no distinct and clear topographic break at the edge of a pool, the maximum observed or recorded water level represents the ecological boundary of the vernal pool. This boundary is evident and should be delineated by leaf staining and other indicators of hydrology outside of the peak-flood stage of early spring (March through early April in most cases).

\*PLEASE NOTE\* The boundary of vernal pool habitat may be defined differently for the purpose of state or federal protection.

The physical, on-the-ground, boundary of a certified vernal pool is not established when a certification number is issued. Field observations of maximum flood levels, or of indicators of the maximum water level, must be made to determine the boundary. The boundary must be established based on field observation of water level indicators. The NHESP, in certifying a vernal pool, does not visit the pool, and as such does not establish the actual boundary through the certification process. Therefore, in recording observations of vernal pools for the purpose of certification, notes pertaining to observed water level and recognizable landmarks that show maximum flooding are extremely helpful in boundary delineation.

The Wetlands Protection Act regulations allows a project proponent to submit an opinion as to the extent of a certified vernal pool that is based upon a theoretical one year storm of a total of 2.7 inches of water in 24 hours. If an opinion based on this theoretical storm event is to be submitted, it should also include ground water that the basin is holding at the beginning of the spring amphibian breeding season. Calculations without groundwater inputs will under-represent the true size of the vernal pool. The DEP has stated in its program policies that ground water inputs should not be ignored in these calculations because it will result in a total volume that may be considerably smaller than the basin holds in any given spring.

### How Can Vernal Pools BE CERTIFIED?

The Massachusetts Natural Heritage & Endangered Species Program administers the official vernal pool certification program. The certification program depends entirely on volunteer effort and the initiative of interested individuals and organizations Interested parties should locate potential vernal pools and then:

1. Contact the Massachusetts Natural Heritage & Endangered Species Program [(508) 792-7270, ext. 200 or www.state.ma.us/dfwele/dfw/nhesp/heritage.htm] to obtain the official *Guidelines for the Certification of Vernal Pool Habitat*, along with Vernal Pool Field Observation Forms;

Certification is based on proof that a confined basin depression provides important wildlife habitat consistent with the vernal pool certification criteria in the *Guidelines*. Animals that use vernal pools at some point in their life cycle are generally divided into two groups:

**Obligate Species:** those vertebrate and invertebrate species that rely on vernal pools for all or a portion of their life cycle and are unable to successfully complete their life cycle without vernal pools

**Facultative Species:** those vertebrate and invertebrate species that can use vernal pool habitat for all or a portion of their life cycle, but are able to successfully complete their life cycle in other water bodies

Obligate species serve as *direct* indicators of vernal pool habitat because they require at least two months of flooded conditions and the absence of established fish populations. When breeding evidence of obligate species is documented, it is not necessary to prove that an established, reproducing fish population does not exist. Facultative species serve as *indirect* indicators of vernal pool habitat. Therefore, if only facultative species are observed, evidence that there is no reproducing fish population must also be submitted for certification.

2. Fill out and submit a Field Observation Form along with photographic documentation of the physical and biological criteria required by the *Guidelines* and required maps to the NHESP for review. Photographs (slides or prints) are the preferred type of documentation of the biological certification criteria observed in a vernal pool. The most easily photographed evidence of vernal pool indicator species is egg masses of wood frogs and mole salamanders. These are conspicuous in the early spring and easily distinguished from other amphibian eggs. See the *Guidelines* for details.

Following receipt of certification materials, the Natural Heritage & Endangered Species Program assesses the completeness and accuracy of the information and documentation submitted. The NHESP does not field visit pools prior to certification but relies on the presentation of accurate and clear documentation.

After it is determined that a vernal pool meets the physical and biological criteria established in the *Guidelines*, it will be officially certified by the NHESP. The observer, local conservation commission, regional office of the Department of Environmental Protection and the landowner are notified of the certification. The locations of certified vernal pools are plotted on the NHESP's "Estimated Habitats of Rare Wetlands Wildlife and Certified Vernal Pools" on a biennial basis. These maps are sent to the town clerk and to the conservation commission, and are available for viewing by the public. The NHESP also produces a statewide Atlas of these maps, reproduced at a reduced scale, which is available at cost. The certified vernal pool datalayer is also available in digital format through the MassGIS office.